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(54) Title: COMPOSITE PEPTIDE COMPOUNDS FOR DIAGNOSIS AND TREATMENT OF DISEASES CAUSED BY PRION PROTEINS

(57) Abstract: The present invention relates to diseases caused by prion proteins, Novel composite peptide compounds are disclosed which comprise two or more peptides or peptide fragments optionally linked to a backbone and the peptides or peptide fragments are spatially positioned relative to each other so that they together form a non-linear sequence which mimics the tertiary structure of one or more PrP^{Sc}-specific epitopes as evidenced by the test described herein. The use of such conjugates as immunogens for the production of antibodies that specifically bind to the pathogenic form of a prion protein is revealed. Other uses of the composite peptide compounds are also disclosed, such as use in diagnostic assays, production of antibodies and uses as vaccine immunogens for the prophylactic protection and therapeutic treatment of subjects against transmissible prion disease.



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INTERNATIONAL SEARCH REPORT

International Application No

PCT 03/00555

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/47 A61K47/48 G01N33/68 C07K16/18 C07K19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

CHEM ABS Data, BIOSIS, WPI Data, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	M L RILEY ET AL.: "High-level expression and characterization of a covalently linked dimer of the prion protein" PROTEIN ENGINEERING, vol. 15, no. 6, June 2002 (2002-06), pages 529-537, XP002240328 ENGLAND GB the whole document	1-86
X	WO 99 15640 A (UNIVERSITY OF CALIFORNIA) 1 April 1999 (1999-04-01) the whole document	1-86
X	WO 97 10505 A (UNIVERSITY OF CALIFORNIA) 20 March 1997 (1997-03-20) the whole document	1-86
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

10 February 2004

Date of mailing of the international search report

17/02/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 95 31466 A (UNIVERSITY OF CALIFORNIA) 23 November 1995 (1995-11-23) the whole document ---	1-86
X	WO 97 04814 A (UNIVERSITY OF CALIFORNIA) 13 February 1997 (1997-02-13) the whole document ---	1-86
A	WO 97 46572 A (UNIVERSITY OF CALIFORNIA) 11 December 1997 (1997-12-11) the whole document ---	1-86
A	WO 99 15651 A (PRIONICS INC.) 1 April 1999 (1999-04-01) cited in the application the whole document ---	1-86
A	WO 97 38011 A (PEPRESEARCH) 16 October 1997 (1997-10-16) cited in the application the whole document ---	1-86
A	WO 93 11155 A (PROTEUS MOLECULAR DESIGN LTD.) 10 June 1993 (1993-06-10) cited in the application the whole document -----	1-86

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 03/00555

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 85-86 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/03/00555

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